

REMARKS

This is in response to the Office Action mailed on December 10, 2004.

Claims 1, 7, 11, 14, 19, 23, 27, and 31 are amended, no claims are canceled, and no claims are added; as a result, claims 1-34 are pending in this application. The amendments to the claims are fully supported by the specification as originally filed. No new matter is introduced. Applicant respectfully requests reconsideration of the above-identified application in view of the amendments above and the remarks that follow.

Support for claims 1, 7, 11, 14, 19, 23, 27, and 31 may be found in the specification, for example, on page 9, lines 10-25.

Amendment to the Title

The title is amended for clarity.

§102 Rejection of the Claims

Claims 14-18 were rejected under 35 USC § 102(e) as being anticipated by Osten (U.S. 2003/0193061). Applicant traverses these grounds of rejection of these claims.

Applicant reserves the right to swear behind Osten at a later date.

Applicant submits that the features in claim 14 relating to a process provide structural features since the complete set of physical and electrical properties of a dielectric layer are dependent on such process features. However, to expedite prosecution of the instant application, claim 14 is amended in line with an embodiment using the cited process features.

Applicant cannot find in Osten a disclosure, a teaching, or a suggestion of a transistor having a praseodymium oxide dielectric layer on a body region, where the praseodymium oxide contacts the body region substantially without an interface material between the praseodymium oxide and the body region as recited in claim 14. In the Office Action, it is stated that "Regarding claims 16-18, Osten teaches forming very pure praseodymium oxide dielectric layer with reference to X-ray and TEM studies in paragraph 45." However, Applicant submits that the Osten discussion in paragraph 45 generally relates to a crystal lattice of praseodymium oxide on a substrate. Osten's discussion of crystalline praseodymium oxide in a transistor is provided in paragraph [0056], where Osten discusses a transistor having a praseodymium oxide layer with an

interface including a silicate. Osten's transistor in this discussion has a praseodymium oxide dielectric layer and an interface that is "less than 20%" of the transistor's gate oxide layer, where the interface includes a silicate. Thus, Osten appears to teach away from the features recited in instant claim 14. Thus, Applicant submits that Osten does not disclose, teach, or suggest all the elements as recited in claim 14, and that claim 14 is patentable over Osten.

Claims 15-18 are dependent on claim 14, and are patentable for at least the reasons stated above with respect to claim 14.

Applicant requests withdrawal of these rejections of claims 14-18, and reconsideration and allowance of these claims.

First §103 Rejection of the Claims

Claims 1-13 and 19-26 were rejected under 35 USC § 103(a) as being unpatentable over Osten in view of Wilk (U.S. 6,258,637) and Borden (U.S. 6,154,280). Applicant traverses these grounds of rejection of these claims.

Applicant cannot find in the combination of Osten, Wilk, and Borden a teaching or a suggestion of a transistor having a praseodymium oxide dielectric layer on a surface portion of a body region, where the praseodymium oxide contacts the surface portion substantially without an interface material between the praseodymium oxide and the surface portion, as recited in claim 1. With respect to claims 5 and 6, it is stated in the Office Action that

Regarding claims 5 and 6, Osten teaches forming very pure praseodymium oxide dielectric layer with reference to X-ray and TEM studies in paragraph 45. Osten fails to teach the dielectric layer is without silicon oxide or silicide.

However, it would have been obvious to one with ordinary skill in the art at the time of the invention that the dielectric layer is not contaminated with silicon oxide or silicide since the crystalline and the diffraction properties will be changed due to the contamination of impurity phases especially in the electron diffraction results.

Applicant respectfully disagrees. These discussions in Osten referenced in the above quote appear to generally relate to a crystal lattice of praseodymium oxide on a substrate. Osteen's discussion of crystalline praseodymium oxide in a transistor is provided in paragraph [0056], where Osten discusses a transistor having a praseodymium oxide layer with an interface including a silicate. Applicant cannot find in Wilk and Borden a teaching or suggestion of a

praseodymium oxide dielectric layer, and Osten discusses a transistor having a praseodymium oxide dielectric layer and an interface that is “less than 20%” of the transistor’s gate oxide layer, where the interface includes a silicate. Thus, the combination of Osten, Wilk, and Borden appear to teach away from the features recited in instant claim 1. Thus, Applicant submits that the combination of Osten, Wilk, and Borden does not teach or suggest all the elements as recited in claim 1, and that claim 1 is patentable over Osten in view of Wilk and Borden.

Applicant further submits that independent claims 7, 11, 19, and 23 are patentable over Osten in view of Wilk and Borden for at least the reasons discussed above with respect to claim 1. Claims 2-6, claims 8-10, claims 20-22, and claims 24-26 depend on claims 1, 7, 11, 19, and 23, respectively, and are patentable over Osten in view of Wilk and Borden for at least the reasons discussed above with respect to claim 1.

Applicant requests withdrawal of these rejections of claims 1-13 and 19-26, and reconsideration and allowance of these claims.

Second §103 Rejection of the Claims

Claims 27-34 were rejected under 35 USC § 103(a) as being unpatentable over Osten in view of Wilk, Borden, and alleged Admitted Prior Art. Applicant traverses these grounds of rejection of these claims.

Applicant submits that independent claims 27 and 31 are patentable over Osten in view of Wilk, Borden, and the alleged Admitted Prior Art for at least the reasons discussed above with respect to claim 1. Claims 28-30 and claims 32-34 are dependent on claims 27 and 31, respectively, and are patentable for at least the reasons stated above with respect to claims 27 and 31.

Applicant requests withdrawal of these rejections of claims 27-34, and reconsideration and allowance of these claims.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 371-2157 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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By their Representatives,

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Date 22 February 2005 By _____


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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 22 day of February, 2005.